

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

NICARAGUA

IMPROVEMENT OF PLANT, ANIMAL AND FOREST HEALTH SERVICES

(NI-0182)

LOAN PROPOSAL

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ANNEXES

Annex I	Summarized logical framework
Annex II	Procurement table

BASIC SOCIOECONOMIC DATA

For basic socioeconomic data, including public debt information, please refer to the following address:

<http://www.iadb.org/RES/index.cfm?fuseaction=externallinks.countrydata>

INFORMATION AVAILABLE IN THE TECHNICAL FILES OF RE2

Preparation:

1. Draft of Nicaraguan Integrated Food Safety System (SINIA)*
2. Woller, Thierry (2001). Republic of Nicaragua. Evaluation of Animal and Plant Health Services and Food Safety. November.*
3. European Commission – Health & Consumer Protection Directorate. Final Report of a Mission Carried out in Nicaragua from 13 to 24 January 2003 to Evaluate the Controls on the Production and Export of Bovine Fresh Meat and the General Animal Health Situation.
4. Program economic evaluation*
5. Detailed Logical Framework*
6. Detailed table of program costs and procurement*
7. Republic of Nicaragua. Basic Law on Animal Health and Plant Protection) (Law 291 of 1998)*
8. Selection criteria for beneficiaries of health education*

Execution:

1. DGPSA Organizational Restructuring Plan. September 2003*

* Available in Spanish

ABBREVIATIONS

AGPs	Agricultural Good Practices
AOP	annual operating program
CNDR	Centro Nacional de Diagnóstico y Referencia [National Diagnostic and Reference Center]
DARA	Dirección de Acreditación y Regulación de Alimentos [Food Accreditation and Regulation Division]
DGPSA	Dirección General de Protección y Sanidad Agropecuaria [Agricultural Health and Protection Directorate]
DIA	Dirección de Inocuidad Alimentaria [Food Safety Division]
FAO	Food and Agriculture Organization
FBI	Food-borne illnesses
HACCP	Hazard Analysis and Critical Control Points
HGPs	Handling Good Practices
IRR	Internal Rate of Return
ITR	Identification, Traceability and Recall
LABAL	MIFIC Food Laboratory
LGP	Laboratory good practices
LHR	Compendium of health regulations
MAGFOR	Ministry of Agriculture and Forests
MGP	Manufacturing Good Practices
MIFIC	Ministry of Development, Industry and Trade
MINSA	Ministry of Health
OIRSA	International Regional Organization for Plant Protection and Animal Health
PCU	Project coordinating unit
QM	Quality management
RAAN	Autonomous Region of the North Atlantic
RAAS	Autonomous Region of the South Atlantic
SILAI	Sistemas Locales de Atención Integral en Salud [Local Comprehensive Health Care Systems]
SINIA	Sistema Integrado Nicaragüense de Inocuidad Alimentaria [Nicaraguan Integrated Food Safety System]
SOHP	Standard Operating Health Procedures
SPM	Sanitary and phytosanitary measures
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
WHO	World Health Organization
WTO	World Trade Organization



Inter-American Development Bank
Regional Operations Support Office
Operational Information Unit

Nicaragua

Tentative Lending Program

2003

Project Number	Project Name	IDB US\$ Millions	Status
NI0167	Multisectoral Global Program	30.0	APPROVED
NI0172	Modernization of the State and Fiscal Reform	25.0	
NI0182	Improvement of Plant, Animal and Forestry Health and Sanitary Services	7.3	
NI0181	Institutional Support to the Coordination and Strategy Secretariat	6.0	
Total - A : 4 Projects		68.3	
TOTAL 2003 : 4 Projects		68.3	

2004

Project Number	Project Name	IDB US\$ Millions	Status
NI0171	Basic Education for the Young and the Adults	10.0	
NI0180	VIII population and IV housing census	10.0	
NI0170	PPP Road Program for Competitiveness	40.0	
NI0183	Social Reform Program II	15.0	
NI1001	Health Program II	30.0	
NI0113	Multiphase Program Secondary Roads	40.0	
Total - A : 6 Projects		145.0	
NI0155	Integral Attention to poor neighborhoods	20.0	
NI0168	Citizenship Security Prog.	7.0	
NI0152	Masaya Basin and Municipality Env Prog	10.0	
NI0177	Administrative Probity and Anti-Corruption Plan	15.0	
Total - B : 4 Projects		52.0	
TOTAL - 2004 : 10 Projects		197.0	
Total Private Sector 2003 - 2004		0.0	
Total Regular Program 2003 - 2004		265.3	

* Private Sector Project



NICARAGUA

IDB LOANS

APPROVED AS OF AUGUST 31, 2003

	US\$Thousand	Percent
TOTAL APPROVED	2,049,007	
DISBURSED	1,567,201	76.48 %
UNDISBURSED BALANCE	481,806	23.51 %
CANCELATIONS	41,909	2.04 %
PRINCIPAL COLLECTED	336,286	16.41 %
APPROVED BY FUND		
ORDINARY CAPITAL	262,221	12.79 %
FUND FOR SPECIAL OPERATIONS	1,717,828	83.83 %
OTHER FUNDS	68,957	3.36 %
OUTSTANDING DEBT BALANCE	1,230,914	
ORDINARY CAPITAL	140,937	11.44 %
FUND FOR SPECIAL OPERATIONS	1,085,128	88.15 %
OTHER FUNDS	4,849	0.39 %
APPROVED BY SECTOR		
AGRICULTURE AND FISHERY	365,474	17.83 %
INDUSTRY, TOURISM, SCIENCE AND TECHNOLOGY	108,187	5.27 %
ENERGY	205,845	10.04 %
TRANSPORTATION AND COMMUNICATIONS	268,366	13.09 %
EDUCATION	22,240	1.08 %
HEALTH AND SANITATION	176,051	8.59 %
ENVIRONMENT	64,580	3.15 %
URBAN DEVELOPMENT	57,014	2.78 %
SOCIAL INVESTMENT AND MICROENTERPRISE	284,788	13.89 %
REFORM AND PUBLIC SECTOR MODERNIZATION	465,758	22.73 %
EXPORT FINANCING	1,826	0.08 %
PREINVESTMENT AND OTHER	28,877	1.40 %

* Net of cancellations with monetary adjustments and export financing loan collections.



NICARAGUA

STATUS OF LOANS IN EXECUTION

AS OF AUGUST 31, 2003

(Amount in US\$ thousands)

APPROVAL PERIOD	NUMBER OF PROYECTS	AMOUNT APPROVED*	AMOUNT DISBURSED	% DISBURSED
<u>REGULAR PROGRAM</u>				
Before 1997	1	15,000	5,970	39.80 %
1997 - 1998	3	134,730	91,590	67.98 %
1999 - 2000	14	201,455	81,072	40.24 %
2001 - 2002	15	339,950	62,427	18.36 %
2003	1	30,000	0	0.00 %
TOTAL	34	\$721,135	\$241,059	33.43 %

* Net of cancellations. Excludes export financing loans.

IMPROVEMENT OF PLANT, ANIMAL AND FOREST HEALTH SERVICES

(NI-0182)

EXECUTIVE SUMMARY

Borrower:	Republic of Nicaragua	
Executing agency:	Ministry of Agriculture and Forests (MAGFOR), with the participation of the Ministry of Health (MINSa), Ministry of Development, Industry, and Trade (MIFIC), and the beneficiary municipios.	
Amount and source:	IDB (FSO):	US\$7,300,000
	Local:	US\$ 811,000
	Total:	US\$8,111,000
Financial terms and conditions:	Amortization period:	40 years
	Grace period:	10 years
	Disbursement period:	Minimum 3 years
		Maximum 4 years
	Inspection and supervision:	1%
	Credit fee:	0.5%
	Interest rate:	1% for first 10 years and 2% thereafter
Objectives:	<p>The general objective of the program is to increase the domestic and foreign trade of Nicaraguan animal, plant and forestry-based products. The specific objective is to ensure that Nicaraguan agricultural and agrifood products comply with the health rules, regulations and standards of national and international trade, through sustainable quality upgrades of plant and animal health services and food safety. This objective will be attained through: (i) improvement of the regulatory framework of the Dirección General de Protección y Sanidad Agropecuaria [Agricultural Health and Protection Directorate] (DGPSA), the Dirección de Acreditación y Regulación de Alimentos [Food Certification and Regulation Division] and the Centro Nacional de Diagnóstico y Referencia [National Diagnostic and Reference Center] (CNDR) of the Ministry of Health (MINSa), and the Dirección General de Competencia y Transparencia en los Mercados [Market Competition and Transparency Directorate] (DGCTM) of the Ministry of Development, Industry and Trade (MIFIC); (ii) the integration, expansion and strengthening of agricultural and forestry health services management; and (iii) training</p>	

of staff and educational services for farmers, manufacturers, distributors and consumers.

Description:

The program contains three components:

1. **Institutional support (US\$507,000).** Agencies involved in key areas of national health quality will engage in capacity strengthening activities. Consulting, training and documentation services, computer equipment and vehicle purchases will be financed to support the following priority areas for the DGPSA, MINSA and a group of beneficiary municipios: (i) establishment and implementation of the Nicaraguan Integrated Food Safety System (SINIA); (ii) development and implementation of the organizational restructuring of the DGPSA; (iii) preparation of a systemized technical compendium of current Nicaraguan health laws, rules, regulations and procedures; (iv) design of a service fee system; (v) establishment of a management system for the CNDR and for the Dirección de Acreditación y Regulación de Alimentos [Food Accreditation and Regulation Division] (DARA) within MINSA; and (vi) capacity strengthening support for a cluster of municipios to enable them to handle the registries of productive units and cattle, to be identified and registered by the DGPSA under the program.
2. **Service expansion and strengthening (US\$5.8 million).** Technical training in safety and protection will be offered, and the facilities, equipment and management systems for the DGPSA (animal health, plant protection, safety, quarantine, laboratories, systems and management system); MINSA (strengthening of Local Comprehensive Health Care Systems (SILAIS) and laboratories); and MIFIC (Codex, standardization, accreditation and food laboratory) will be outfitted and modernized.
3. **Health education and communication (US\$857,000).** Financing will be provided to cover the consulting services, material and documentation necessary to expand the flow of health service information to DGPSA users and consumers of agricultural products, in order to foster an understanding of the importance of plant protection and animal health services in achieving food safety, and promote agricultural product exports. To this end, three subcomponents are supported: (i) health education; (ii) creation of a health quality seal; and (iii) health quality surveys.

The Bank's country and sector strategy:

The Bank's country strategy for 2003-2005 (GN-2230-1), approved in February 2003, is based on three strategic approaches: (i) economic growth, (ii) governance, and (iii) productivity of the poorest groups. In the first approach, the Bank plans to help the country attain a growth rate of 5% in 2005, with increased production and exports. The proposed program supports the first strategic approach, by modernizing health services in support of agricultural and forestry production to promote trade and opportunities for more competitive product placement in domestic and foreign markets, and providing training to producers in sanitation, quality, safety, environmental protection and productivity.

Coordination with other official development institutions:

MAGFOR has support from the International Cooperation Development Fund (ICDF) in the amount of US\$670,000, to carry out campaigns to eradicate swine fever and Mediterranean fruit fly from the country and pink bollworm from Corn Island and Little Corn Island, through the Regional International Organization for Plant Protection and Animal Health (OIRSA). Since 1999, it has received USAID PL-480 funds to finance two programs: the Epidemiological Monitoring of Animal Health Project (PROVESA) and the National Sanitary and Phytosanitary Monitoring Program (PROVISAVE). These programs were designed to focus specifically on animal and plant monitoring tasks. The new Bank program takes a comprehensive view of the government's health functions and includes support for health campaign services to reduce or eradicate infestations and diseases. The new program is therefore being drawn up to complement the activities financed by the United States Agency for International Development (USAID), to which end the team shared information with the respective officials at USAID and the United States Department of Agriculture (USDA) (paragraph 1.23).

Environmental and social review:

The project is expected to have the following positive impacts on the population's well-being:

- (i) Improvement in the socioeconomic conditions of the farmers and manufacturers as a result of: (a) an increase in exports of food and agricultural products through the access to new markets afforded by a more reliable plant, animal and forest health system; (b) greater consumption of local Nicaraguan food products, due to greater confidence in food safety as a result of the creation of the Nicaraguan Integrated Food Safety System (SINIA); and (c) better communication to customers about measures undertaken by the authorities.
- (ii) Benefits to national public health by improving the safety of products available in the local market. The establishment of SINIA will include more effective controls, making it

more efficient through the integration of available resources and coordination with the institutions in charge.

- (iii) Upgraded services and increased safety in material-handling procedures and methods for laboratories will result in greater protection of the staff involved.
- (iv) The installation of a quarantine station in El Rama in the Autonomous Region of the South Atlantic (RAAS) will augment the technical staff and presence of the DGPSA in the region. Training activities in the native languages of the farming communities on the Atlantic coast will expand the scope of DGPSA's services in this area of the country.

The project is expected to have positive environmental impacts, such as:

- (i) Less pollution of the soil, water sources, agrifood and the population from hazardous chemicals, and prevention of increased resistance of pathogenic microorganisms.
- (ii) Reduction of environmental pollution risks from illnesses and pathogenic microorganisms, as the result of improvements in the design, efficiency and observance of biosafety measures in the laboratories.
- (iii) Improved controls in the importation of genetically modified organisms (GMOs) and agrochemical substances barred from import.
- (iv) Identification of productive units and animals to enable them to be traced, making it possible to identify health and bioterrorism risks throughout the entire productive chain.

Benefits:

The program's main benefits will come from Nicaraguan products having better access to domestic and foreign markets, as the markets recognize that Nicaraguan products meet international health standards. Agricultural product rejections and losses will be reduced, boosting productivity, and forestry products will be better protected by reducing the incidence of outbreaks of animal and plant diseases, infestations and pests.

A reliable system of plant protection and animal health certification will promote increased and diversified export production, resulting in better economic opportunities for producers. Nicaragua will have a health certification system that will make it more competitive and better attuned to the rest of the Central American region.

The economic viability of the program investment was analyzed, based on the strategy of targeting services aimed at commodities of higher volume and commercial value, capturing greater demand. The analysis focused on the economic impact of increasing exports of the following commodities: beef cattle (meat and milk); poultry, pork, shrimp, peanuts and corn; and on the program's impact on public health through increased food safety. The analysis concluded that the project will generate a high economic return in terms of the internal rate of return (IRR), as a result of maintaining the export levels of meat (285%) and shrimp (165%); increasing exports of chicken (25%) and peanuts (152%); and boosting corn production (33%). The return from pork production was not high enough to justify providing it with support. The economic return of reducing food-borne illnesses and mortality resulted in an IRR of 30%. The aggregate return by weighting the selected commodities yielded an IRR of 75%.

Risks:

The success of the program requires that Nicaragua maintain its export level of certain commodities, for which it must have access to international markets. The project includes investment in activities that will help Nicaragua meet the plant protection and animal health requirements of countries purchasing the commodities with highest commercial potential. Demand may not be as high, due either to a lack of knowledge of the importance of food safety or the inability to identify safe products. For this reason, the program includes health education and health quality seal system campaigns.

The successful operation of SINIA requires that the technical staff of MINSA, MIFIC and the DGPSA work collaboratively on the project. To facilitate coordination of activities and help the officials fit in to the new organizational structures, the project will finance training for the staff in their new roles and offer workshops, with the joint involvement of staff from participating agencies. The SINIA protocol of operation, which formalizes the coordination of activities and the definition of duties and competencies, was prepared jointly with the technical staff delegated from each ministry.

With the new real cost-based fee structure, rates are generally expected to increase under the new system. This creates the risk that users may resist paying the rates, leading to a drop in total demand for DGPSA services. To offset this risk and build demand for services, the project intends to improve the quality and relevance of the services provided by the DGPSA and to increase demand through campaigns, improved communications with customers and the generation of new users.

Special contractual clauses:

Conditions precedent to the first disbursement. The first disbursement of Bank funds will be subject to the borrower's fulfillment, to the Bank's satisfaction, of the following conditions: (i) the legal instrument formalizing the establishment of the cooperation protocol for the operation of SINIA (paragraph 2.3) has been adopted and is in effect; and (ii) the project coordinating unit (PCU) has been set up and the project coordinator has been selected in accordance with the terms previously agreed by the executing agency and the Bank (paragraph 3.2).

Conditions previously fulfilled. The executing agency and the Bank have agreed on the plan for organizational restructuring of the DGPSA, the implementation of which will be covered by the program (paragraph 2.3). During negotiations, the executing agency and the Bank agreed on the criteria for selecting the producers, to be used in the health education activities in Component 3 (paragraph 3.5).

Other special conditions. Activities relating to support for the municipios will be eligible for financing, provided that the beneficiary municipio has signed an interagency agreement with MAGFOR (paragraph 2.3c).

Poverty and social equity classification:

This operation does not qualify as a program to promote social equity, nor does it qualify as a poverty-targeted program (PTI) (see paragraph 4.12).

Exceptions to Bank policy:

None.

Procurement:

The contracting of works, procurement of goods and related services, and hiring of consulting services needed for the program will be in accordance with the Bank's policies and procedures on the subject. International competitive bidding will be required if the estimated cost of the works is equal to or greater than the equivalent of US\$1 million and the estimated cost of goods and related services is equal to or greater than the equivalent of US\$250,000. The international open call for proposals procedure will be employed if costs for the hiring of consulting firms exceed the equivalent of US\$200,000. Contracts for works, goods and related services and the hiring of consulting services in amounts below those mentioned above will be in accordance with the laws of the country, provided that they are not contrary to Bank policies (paragraph 3.6).

In the hiring of consulting services to be financed for some of the activities in components I and III, the quality and price weighting method may be used, in a ratio of 80% and 20%, respectively (paragraph 3.7)

The staff, to be financed with loan funds, the cost of which will be assumed by MINSA at the end of the program (paragraph 2.4b), will be hired through a fixed budget-based competitive procedure, so as not to affect the salary scale (paragraph 3.8).

The description of the purchases to be made, by type of good, lot and schedule, is in Technical File #6.

I. FRAME OF REFERENCE

A. Socioeconomic framework

- 1.1 Agricultural and forest products represent Nicaragua's largest export commodity, and the greatest potential for growth. In recent years, close to 70% of the country's exports and 30% of its GDP have come from the agricultural and forestry sector. The goal of the Government of Nicaragua for the next few years is to significantly strengthen the position of its products in the international market. Technological developments in agriculture and global agricultural market shifts have demanded changes in production and processing methods and in safety and quality requirements that, absent adequate attention, could become the greatest obstacle to the flow of trade and a risk factor for losses. To improve integration in these markets and to satisfy the commitments assumed or to be assumed under trade treaties, Nicaragua must have an efficient and reliable plant and animal inspection and certification system to assure the markets of its products' health and safety levels. Accordingly, the national institutions charged with regulating and monitoring health activities need to make the changes that will enable them to improve their regulatory framework and management systems.
- 1.2 Nicaraguan product health standards need to be consistent with the Agreement on the Application of Sanitary and Phytosanitary Measures (SPM) of the World Trade Organization (WTO). Within the framework of this agreement, the WTO recommends that member countries adopt, to the extent possible, the international standards of lead agencies such as the Joint FAO/WHO Codex Alimentarius Commission, the International Office of Epizootics (IOE), and the International Plant Protection Convention (IPPC). Likewise, Nicaragua needs to develop the mechanisms for implementing the Central American regulations on SPM under the Central American Economic Integration System. Like other countries in the region, Nicaragua also faces demands growing out of the new global security environment, such as the threat of bioterrorism and requirements for traceability and certification of origin, new production practices such as those for organic products, animal welfare, use of genetically modified organisms (GMOs) in crops and animals, and the identification of new health risks, such as ochratoxin in coffee, which require that the country have the ability to adopt new measures for monitoring, protection and response.
- 1.3 To protect the health of the national consumer, and as an essential element for the endorsement of Nicaraguan food products in domestic and foreign commerce, it is equally important for the country to ensure the safety of its food products. The growth in food volume traded through the formal and informal markets, and the degree of legal responsibility that producers and distributors have vis-à-vis consumers, require greater control by the authorities of health conditions all along the food chain, within a context of challenges and commitments related to technological innovation, competitiveness, reliability and transparency.

B. Institutional framework

- 1.4 The Ministry of Agriculture and Forests (MAGFOR) has traditionally been the institution providing agricultural health services in Nicaragua, through its Dirección General de Protección y Sanidad Agropecuaria [Agricultural Health and Protection Directorate] (DGPSA). The DGPSA has been delegated the authority to execute and enforce Law 291, Basic Law on Animal Health and Plant Protection, issued in July 1998, which sets out the fundamental provisions for plant, animal and forestry health protection and preservation, their products and byproducts, as well as their impact on human health. In compliance with this law, the DGPSA regulates, controls and facilitates plant protection and animal health activities in the production, mobilization, export and import of animals, plants, animal and plant products, byproducts, and inputs used in agriculture, aquaculture, fishing and forestry. These services have served to support the marketing process, offer infestation and disease information, prevent the entry of exotic infestations and diseases into the country, register and certify agricultural products and inputs, and develop campaigns to eradicate infestations and diseases.
- 1.5 The regulations to Law 291 set out the organizational structure of the DGPSA, with three divisions: Animal Health, Plant Health and Registries. Each division has its own facilities, laboratories and support resources, resulting in oversizing, underutilization of equipment and resources in certain services and scarcity in others, and duplication of support functions, which could be organized and grouped more efficiently. In the current structure, the subject of safety has been handled on a fragmented basis by the animal health and plant health divisions. The Ministry of Health (MINSA) and the Ministry of Development, Industry and Trade (MIFIC), jointly with the DGPSA, play a key role in food safety and health activities. These responsibilities shared among the three ministries require an interaction that does not always materialize, so that duplication of efforts and omissions in oversight occur, which can jeopardize the integrity of the safety system, create gaps in certain control points and duplication of expenses in some areas.
- 1.6 MINSA, through its Food Accreditation and Regulation Division (DARA) and the National Diagnostic and Reference Center (CNDR), is responsible for ensuring the safety of food at the stages of processing, marketing and final consumption. MINSA performs its hygiene control functions through approximately 250 inspectors assigned to 17 Local Comprehensive Health Care Systems (SILAIS) in the country, whose tasks cover a number of functions such as occupational hygiene, school hygiene, environmental health, zoonosis-related functions and the inspection of food products and businesses. Of the total number of MINSA hygienists, 85% have no training in the area of food inspection, leading to a very low degree of food inspection effectiveness.
- 1.7 MIFIC, through the Dirección de Tecnología, Normalización y Metrología [Technology, Standardization and Metrology Division], acts as official contact with

the Codex Alimentarius Commission, used as the benchmark for safety certification, and is responsible for managing and heading the commissions that approve the country's official guidelines (Nicaraguan Compulsory Technical Guidelines) and voluntary guidelines. It is also responsible for accreditation of the country's quality certification bodies. It is in charge of negotiating free trade agreements, and plays a major role in promoting Nicaraguan-based agricultural products. Through its Market Competition and Transparency Directorate, it is also responsible for inspecting commercial food establishments to verify compliance with consumer protection guidelines, such as truth in labeling and expiration dates. The current Consumer Protection Division of MIFIC, whose functions are defined in Law 182, Consumer Protection Law, has two inspectors for the entire country, making effective inspections impossible. For this reason, MIFIC delegates part of its actions to Consumer Associations, which report irregularities. However, these associations lack a sufficient level of expertise to perform food safety inspections.

- 1.8 To count on a steady trade flow and to safeguard consumer health, Nicaragua needs a reliable and auditable technical and regulatory food safety framework, that will include MINSA, MIFIC and MAGFOR, to regulate and bring the country in line with the commitments and requirements of domestic and foreign markets.
- 1.9 Pursuant to Law 291, and to achieve financially sustainable service delivery, the DGPSA introduced the fee schedule for its services in the 1990s. But the rates were not applied consistently, not revised regularly and not calculated efficiently. In certain cases, the fees collected are several times higher than the cost of services rendered, causing the user to resist paying, while in other cases, such charges failed to comply with the minimum cost recovery criterion. As a result, DGPSA total revenues have been insufficient to cover operating costs and make investments. Various donor institutions have done service cost studies, but no strategy has been defined for the fee schedule to ensure that values are systematically adjusted on the basis of costs, and that fees are applied to the beneficiaries of the services to ensure that such services continue. Moreover, although Law 291 provides for a 30-day period for the Ministry of Finance to pass the fees collected on to the DGPSA, the DGPSA receives a substantial portion of the reimbursement late in the fiscal period. This process limits the agency's ability to achieve service quality in a timely way, generating even more reluctance from producers and agroenterprises to pay the fees.
- 1.10 Market shifts have led to changes in service user needs and expectations and have made it clear that Nicaraguan producers, distributors and consumers lack knowledge about service demand and availability. A successful agricultural health program requires those managing the production process have sufficient knowledge of good practices and maintain a level of self-monitoring of such practices. For their part, domestic consumers do not have sufficient knowledge of the guidelines of food safety assurance, or government efforts to improve food quality so that they can pressure the vendor to comply. To promote the placement of Nicaraguan

products in the international market, the potential consumer also needs to have confidence in the health quality of the product's origin. Foreign consumers are not aware of the quality of Nicaraguan agricultural products, due to a lack of advertising and because the country lacks the image as an agricultural producer that complies with international health standards.

- 1.11 In accordance with Article 7, paragraph 3, of the Municipios Act, the municipios are required to maintain a registry of cattle brands, bills of sale and cattle transportation permits. This function is currently being carried out using a methodology that does not permit cattle to be traced. Since there is no central registry of productive units, cattle owners use the same branding irons to identify their different herds of cattle, and can register in several municipios at the same time.

C. Service infrastructure situation

- 1.12 **DGPSA.** Given the current functions of the Central Veterinary Diagnostic Laboratory, it has neither the facilities nor a geographic location (in downtown Managua) to guarantee an acceptable level of biosafety. The National Center of Phytosanitary Diagnosis needs to be upgraded, maintained, and outfitted with certain equipment to improve response time for results, incorporate forestry plant health and the necessary image processing technology to facilitate international technical consultations, improve the storage of phytopathology data, and expand the insect collection with an image database for domestic and foreign consultation through the DGPSA intranet. The existing regional laboratories for plant health and veterinary diagnoses need to be upgraded to support the health campaigns. The three existing quarantine stations (Guasaule, Corinto and Las Manos) have infrastructure problems and the lack of quarantine stations in La Rama in the Autonomous Region of the South Atlantic (RAAS), Potosí, Trojes-Teotecacinte and Las Tablillas, works against attaining the minimum level of quarantine protection in these regions. Lastly, the DGPSA lacks internal mobile stations to support the health campaigns and to control access to areas that are disease- or infestation-free.
- 1.13 **MINSa.** The current water and food microbiology laboratory of MINSA's CNDR analyzes about 370 water samples and 120 food samples a month. It only has the capacity to do routine analyses, has makeshift facilities and no equipment to perform analyses of high-risk pathogens responsible in recent years for food-borne illnesses (FBIs). Samples of food and human material are received for analysis in the same area. For effective oversight of food commerce and industry, this laboratory should be reconditioned, with a view to providing minimum guarantees of biosafety and at least tripling its analytical and pathogen identification capacity. The function of the Physical-Chemical Food Laboratory, a unit of the CNDR, is to inspect food composition, such as the presence of certain prohibited or restricted additives. Currently, the lack of equipment hinders the identification of hazardous

preservatives, such as potassium bromate, nitrites, benzoates, bisulfites, or the presence of methanol in alcoholic beverages, residues such as lead, tin and other heavy metals in canned products, or artificial food coloring.

- 1.14 **MIFIC.** MIFIC has a food laboratory (LABAL) which performs food monitoring functions. One of the main duties of MIFIC is to oversee food labeling compliance. This includes inspection of the name, net weight, list of ingredients, registrations, storage conditions, manufacture date and expiration date. LABAL should make analytical determinations to verify the condition of the food product on its expiration date. For label approval, microbiology tests should be included to be able to predict the expiration date under preestablished storage conditions. LABAL is not currently capable of doing this kind of testing, which could guarantee food safety.

D. Country strategy in the sector

- 1.15 MAGFOR recognizes the demands of the modern world, where competitiveness based on food quality and safety is essential in the international market. In fact, the MAGFOR policies, enacted and in force, establish the priority of strengthening the country's health system, improving the profitability of producers and the quality of agricultural products, while reducing producer risks. Efforts to rescale of the service strengthening strategy have helped define the following fields of action:
- a. **Certification.** MAGFOR, through its services, seeks to direct its efforts toward the certification of products as a guarantee of the health quality of products earmarked for international trade, and to respond to growing demands from domestic consumers. Internationally recognized approaches, such as the Hazard Analysis and Critical Control Point (HACCP) procedure, will be used.
 - b. **Fee schedule.** MAGFOR's goal is to strengthen the fee collection system for services involving plant protection and animal health and agrifood safety, based on the real cost of services and their sound application, whether public or private assets are involved.
 - c. **Infrastructure.** Service delivery needs to be accompanied by existing infrastructure streamlining and upgrades to develop the activities of diagnosis and analysis, in line with new producer demands to raise the quality of their products.
 - d. **Inspection of agricultural inputs.** MAGFOR is creating a system for registration and monitoring of agricultural inputs so that it can guarantee to producers, at point of sale, inputs of high quality and efficacy for their crops and herds that will not harm human health or the environment, thus reducing the risks of agricultural activity.

- e. **Epidemiological monitoring.** Animal health and plant protection services are aimed at creating plant and animal health warning systems that will enable producers to know the infestation and disease situation with certainty and to take preventive measures to help cut their losses. The services should have a preventive and epidemiological approach.
 - f. **Food safety.** MAGFOR hopes to be able to guarantee food safety through a comprehensive system that will allow for coordination among public health institutions.
 - g. **Mass communications.** MAGFOR seeks to design its activities by taking public opinion and user needs into consideration by improving the channels of communication with the public.
- 1.16 Nicaragua currently does not have sufficient institutional and technical capacity to carry out this mission. Despite shifts in market demand, the services provided by MAGFOR and the manner in which they are offered have failed to keep pace. This situation is reflected in the health quality evaluations made by recognized foreign institutions, such as the European Union and the U.S. Department of Agriculture (USDA). Conscious of the importance of implementing these improvements in the country, the Nicaraguan government has requested the Bank's support for MAGFOR's DGPSA, MINSA and MIFIC to put in motion a reliable system that will guarantee agricultural and forestry health and the safety of the food products that the country produces for domestic consumption and for export, as well as imported products.

E. Bank strategy and participation in the sector

- 1.17 The Bank's country strategy for 2003-2005 (GN-2230-1), approved in February 2003, is based on three strategic approaches: (i) economic growth; (ii) governance; and (iii) productivity of the poorest groups. In the first approach, the Bank intends to help the country attain a growth rate of 5% in 2005, with increased production and exports. The proposed program supports the first strategic approach by modernizing health services in support of agricultural and forestry production to facilitate trade and opportunities for more competitive product placement in domestic and foreign markets, and by training producers in sanitation, quality, safety, environmental protection and productivity.
- 1.18 The Bank supported the country in the development of the sector during the adjustment process of the 1990s with an agriculture sector adjustment program (897/SF-NI and 724/OC-NI) for US\$50 million, to promote the structural, economic and institutional reforms deemed necessary to reinvigorate the sector. The reforms focused on the areas of technology, development of the land tenure system, foreign trade and pricing, natural resource management and rural financing.

This program largely fulfilled its objectives of establishing a suitable institutional and policy framework that bolstered agricultural growth.

- 1.19 The agriculture sector loan activities complemented the agricultural services strengthening program for US\$16 million, executed between 1993 and 2001. The investments made under that program helped to modernize MAGFOR plant protection and animal health services substantially, by financing infrastructure, equipment and training. In November 2001, the program was evaluated and a project completion report was prepared, comprising assessment of the technical, legal and financial needs and shortcomings still suffered by the system, which served as a starting point for the design of the new program. The evaluation recognized the goals attained in terms of infrastructure, the creation of an institutional-legal framework, modernization of legislation, implementation of rates and fees, and the delivery of services in line with market demand and the country's needs in the early 1990s. The evaluation also identified persistent weaknesses in the system, causing the level of services to generally fall short in responding to new and increasing demands for the safety and quality of the current and future market.
- 1.20 The evaluation of the agricultural services strengthening program offers recommendations on the necessary changes within the institutions responsible for regulating and overseeing the various links in the agricultural and agrifood chain, primarily by strengthening the institutional and legal framework, working methodology and procedures, and review of the management model that would make for sustainable service delivery, working jointly with the private sector. Also recommended is the strengthening of MAGFOR, MINSA and MIFIC to fulfill their responsibilities to the consumer in matters of biosafety and security, train the producer and the consumer on good health practices, and restructure existing facilities and services. The program successfully financed technical training activities geared to MAGFOR and DGPSA staff, but consumer communication activities concerning DGPSA services and producer training on agricultural good practices (AGPs), manufacturing good practices (MGPs), standard operating health procedures (SOHP) and HACCP were not considered in the scope of such activities, and are now essential elements for ensuring agrifood product access to international markets.
- 1.21 Through the agricultural services strengthening program, MAGFOR was able to substantially modernize the traditional programs on animal health, plant protection, quarantine and seed certification, with a public service approach, in force internationally when it was designed. The program's successes centered on providing laboratory infrastructure and equipment, strengthening the DGPSA staff's technical skills and establishing a market and pricing system. Noteworthy among the program's shortcomings, in light of current market demands, is the lack of a vision to include the private sector in the decision-making process concerning service delivery and in the delivery itself, becoming a program defined by supply. This resulted in an overestimation of investments in the infrastructure of certain

laboratories that are now underutilized and insufficient investment in others. Today, producer perceive the services offered by the DGPSA as having limited quality. The service fee collection system was implemented under the strengthening program and now the DGPSA has an operating budget based on revenue from fees. However, the fee calculation method does not bring in enough to keep staff adequately trained and the supply levels required to provide services and make investments, jeopardizing service quality. The program was not executed under an institutional or sector strategy, and did not coordinate its efforts with other agencies in charge of sanitary and phytosanitary measures (SPMs).

- 1.22 In July 2002, the Bank approved the regional program to support agricultural trade by means of the regional application of health and phytosanitary measures (ATN/MT-7957-RG) for US\$1.5 million in MIF funds. This program seeks to establish a regional system for the application and harmonization of plant protection and animal health and safety measures in Central America, through the strengthening of the institutional capacity of the executing agency, the Organismo Internacional Regional de Sanidad Agropecuaria [International Regional Organization for Plant Protection and Animal Health] (OIRSA), to provide advice to all countries in the Puebla Panama Plan.

F. Actions of other donors and coordination

- 1.23 MAGFOR has support from the International Cooperation Development Fund (ICDF) in the amount of US\$670,000, to carry out campaigns to eradicate swine fever and Mediterranean fruit fly from the country and pink bollworm from Corn Island and Little Corn Island, through the Regional International Organization for Plant Protection and Animal Health (OIRSA). Since 1999, it has received USAID financing with PL-480 funds for two programs: the Epidemiological Monitoring of Animal Health Project (PROVESA) and the National Sanitary and Phytosanitary Monitoring Project (PROVISAVE). These programs were designed to focus specifically on animal and plant monitoring tasks. The new Bank program takes a comprehensive view of the government's health functions and includes support for health campaign services to reduce or eradicate infestations and diseases, thus complementing activities funded by other sources. The team shared information with the respective officials at USAID, USDA, FAO and OIRSA.

G. Program strategy and design

- 1.24 The program is designed to strengthen the overall health and safety of the most important products in terms of domestic trade and export, from the standpoint of both volume and value, where the greatest demand for health services exists. Based on information obtained during preparation from service users and agencies representing purchasing countries (European Union, United States), the program introduces significant improvements in service quality and methods, focusing on service and support to the producer and consumer as users of the system.

- 1.25 The program supports the government's strategy in the sector, strengthening the country's health system to be able to respond to the demands of the domestic and foreign markets on the subject of agrifood health quality, through: (i) upgrade of animal health and plant protection services to reduce threats that may give rise to agricultural losses and to be able to respond to new market demands and health standards; (ii) establishment of an integrated food safety network to minimize public health risks and external market access problems; and (iii) implementation of mechanisms to systematically provide to and obtain from the consumer information on services and service-related training and promotional campaigns.
- 1.26 The program design took into account the input of the three ministries involved in guaranteeing food safety in the country (MAGFOR, MINSA and MIFIC) on the importance of coordinating their resources and efforts in this area. The Bank received a letter of intent, signed by the three institutions, on their initial cooperation in establishing an integrated food safety system. The SINIA protocol of operation, which formalizes the coordination of activities and the definition of duties and competencies during execution, was prepared jointly with the technical staff delegated from each ministry.
- 1.27 The program takes the achievements of the agricultural services strengthening program as a point of departure, supplementing the advances made and filling the most critical gaps in the service management system with designs for financially sustainable service delivery. The design of the program proposed herein maximizes the use of investments under that program, strengthening the supply of services required from products of higher demand and commercial and economic potential.
- 1.28 Based on the recognition of the increasing complexity of the agrifood productive chain and the interdependent nature of food production, with the market demanding more information on the origin of products consumed, the program introduces the concept of identification and traceability by identification of productive units so as to allow the products' production history throughout the agrifood chain to be known, verify compliance with health procedures and conduct preventive monitoring.
- 1.29 The capacity of the DGPSA and other institutions charged with the key public function of food safety assurance, is strengthened, while at the same time fostering participation by the private sector as user, in identifying the type and quality of services required, and as provider of services that can be delegated under the law.
- 1.30 The program-supported services are offered on a national level. To ensure that the training activities reach indigenous producers and those of African descent, modules will be designed in their native languages.

- 1.31 The program emphasizes self-sustainability through improvements in the system for establishing and collecting service fees. Fees will be based on real costs and will be charged based on the specific benefits derived from the service.

II. THE PROGRAM

A. Objectives and description

- 2.1 The general objective of the program is to increase the domestic and foreign trade of Nicaraguan animal, plant and forestry-based products. The specific objective is to ensure that Nicaraguan agricultural and agrifood products comply with the health rules, regulations and standards of national and international trade, through sustainable quality upgrades of plant protection and animal health services and food safety.
- 2.2 This objective will be attained through (i) improvement of the regulatory framework of the DGPSA, the Food Certification and Regulation Division, the CNDR of the Ministry of Health, and the Dirección General de Competencia y Transparencia en los Mercados [Market Competition and Transparency Directorate] (DGCTM) under MIFIC, (ii) the integration, expansion and strengthening of agricultural and forestry health services management, and (iii) training of staff and education of producers, distributors and consumers.

B. Program structure

1. Institutional support (US\$507,000)

- 2.3 Agencies involved in key areas of the country's health quality will engage in capacity strengthening activities to help them carry out their functions and attain the program goals. Priority areas have been identified to support the DGPSA, MINSA and a group of municipios participating in the program, including:
 - a. **MAGFOR – DGPSA (US\$219,000).** Consulting, training and documentation services, and computer equipment and vehicle purchases will be financed to support the following areas of the DGPSA: the establishment of the Nicaraguan Integrated Food Safety System (SINIA); organizational restructuring of the DGPSA; drafting of a compendium of health regulations; and design of a service fee system.
 - (i) **Nicaraguan Integrated Food Safety System (SINIA).** The program will help establish and put into operation the institutional framework for SINIA by financing: (a) consulting services to prepare the internal by-laws of the decision-making bodies that comprise the system; (b) training for SINIA participants on its operation; and (c) basic administrative expenses for coordination meetings. This system will be the visible body responsible for the country's food safety, assuming strategic, regulatory, operational and trade facilitator functions, and playing a harmonizing role with international health organizations.

SINIA will be created by a Presidential Decree that will include a technical annex called the SINIA Protocol of Operation, which formalizes the organization of fulfillment of the control functions of the different links in the productive and commercial food chain, ensuring coordination of activities and the delimitation of duties and competencies among MAGFOR, MINSA and MIFIC. Under SINIA, the Comisión del Sistema Nicaragüense de Inocuidad Alimentaria [Nicaraguan Food Safety System Commission] (COSINIA) will be established, consisting of representatives of MAGFOR-DGPSA, MINSA, MIFIC and the Association of Municipios, to act as the central coordinating body for SINIA. The functional tasks included in SINIA will be carried out by the line staff of the participating ministries, and therefore new staff will not need to be hired. **The enactment of the legal instrument adopting the protocol of cooperation for the operation of SINIA is a condition precedent to the first disbursement of program funds.**

- (ii) **Organizational restructuring of the DGPSA.** The objective of this sub-component is to strengthen the strategic health functions of the DGPSA, focusing activities on its specific targets and redefining the division between strategic and operational functions. Consulting services, training, documentation services and systems required to implement the organizational redesign will be financed, pursuant to the organizational restructuring plan agreed upon by MAGFOR and the Bank. The following activities are included: (a) final detailed design and documentation of the new structure; (b) drafting of new regulations to Laws 290 and 291 on the organization of the DGPSA and internal manuals; (c) communications workshops for officials concerning the new structure. The organizational restructuring will structure operational functions into three divisions: Animal Health, Plant Protection and Food Safety. Technical support areas, such as the laboratories, registration management, inspection, monitoring and systems, will be consolidated into an Agricultural Health Services Division. The capacity of the Quality Management Unit will be strengthened to gather, process and analyze baseline and follow-up information for environmental management and internal technical evaluation. The additional DGPSA staff to be hired under the program will be financed with local counterpart funds.
- (iii) **Compendium of health rules.** Consulting, training and documentation services will be financed for the preparation of a systemized technical compendium of Nicaragua's current health laws, rules, regulations and procedures, involving the DGPSA, DARA (MINSA), CNDR (MINSA) and the DGCTM (MIFIC). This requires the review, analysis and compilation of existing documents, review and analysis to identify

gaps and inconsistencies, and the drawing up a plan of action to correct the shortcomings identified by this review. All documentation will be rendered electronically, codified and entered into a database of regulations, indexed by subject, key words, date of filing (*protocolización*) and document order and number, for purposes of keeping the compendium updated and accessible to users and officials, and as an integral part of a future National Food Code. It will be posted electronically and published on paper.

- (iv) **Fee system.** The study and design of a fee system for plant protection and animal health services and food safety will be financed, that incorporates a cost recovery plan through payments by the beneficiaries of the services, so that the DGPSA can achieve sustainability.
- b. **MINSA management system (US\$38,000).** Consulting services, documentation and training required to establish a food safety management system within MINSA will be financed for the CNDR and for the Food Certification and Regulation Division. The financed activities will include: (i) preparation of manuals on standard operating procedures, management of quality, biosafety, registration and inspections with respect to both laboratories and registration and monitoring of food in the productive and commercial chain; (ii) training of staff on quality management, microbiological techniques and occupational safety; and (iii) design and implementation of a laboratory management system with communications protocol and monitoring of samples and results, which, among other things, will facilitate the coordination of activities with MAGFOR's Department of Laboratories.
- c. **Support for municipios (US\$250,000).** Computer equipment, support material and consulting services will be financed, to strengthen the capacity of a group of municipios to manage the registries of livestock and productive units to be identified and registered by the DGPSA with program funds. The municipios of the departments identified to begin the operation of SINIA will be eligible for support, provided they sign an interagency agreement with MAGFOR, which will set out, among other things, the form and method in which the assets financed with program resources will be transferred to the municipios, MAGFOR's obligation to coordinate assistance to the municipios through the DGPSA, to comply with their cattle traceability-related duties, the obligations of the municipios to use the financed equipment for program activities and to allow the Bank and a firm of program auditors access to the information relating to this component.

2. Service expansion and strengthening (US\$5.8 million)

2.4 Under this component, technical, safety and protective training will be offered, and the MAGFOR-DGPSA, MINSA and MIFIC facilities, equipment and management systems will be modernized and upgraded, including:

a. **MAGFOR-DGPSA (US\$5.1 million).** The program focuses on providing comprehensive support for the plant protection and animal health services of the DGPSA, targeting the commodities identified as higher demand items due to their importance to domestic and foreign trade, in terms of both volume and value, and, based on analysis, yielding high economic returns. These items are: beef cattle (meat and milk), poultry, shrimp, certain grains and vegetables. In addition, the DGPSA gains the capacity to address new demands with respect to food safety issues, to function effectively in the development and execution of SINIA.

(i) **DGPSA – Animal Health Division.** Plant and animal health monitoring, traceability and campaigns to control illnesses will be upgraded by financing inputs, consulting services, equipment, technical support and vehicles for: (a) the campaign to declare a tuberculosis- and brucellosis-free area in Nueva Guinea and increase the number of dairy farms certified as free of these diseases in the rest of the country; (b) two-year nationwide mass poultry vaccinations for Newcastle disease, to eradicate this disease and declare the country disease-free; (c) support for industrial producers in the eradication of avian salmonellosis and laryngotracheitis, and three-year monitoring; (d) system for identifying all beef cattle born in each of the four years of the program (approximately 300,000 head/year) in the context of the traceability mechanism; (e) strengthening of the tasks of maintaining the current health situation with respect to exotic diseases and infestations; (f) implementation of the aquiculture good practices program, HACCP and shrimp larvae laboratory to identify and control white spot, yellow head and other diseases of shrimp; and (g) monitoring plan agreed upon with the producers.

(ii) **DGPSA – Plant Health Division.** Consulting services, inputs, equipment, technical support and vehicles will be financed for: (a) prepare an emergency plan for exotic and quarantined infestations and diseases; (b) conduct campaigns to control flying locusts and field rats; (c) conduct producer training programs on infestation and disease control and alerts, environmental, safety and MGP considerations; and (d) establish and execute the tasks of monitoring and traceability productive units.

- (iii) **DGPSA – Quarantine.** The quarantine function of the DGPSA will be strengthened in the areas of animal and plant health and food safety, by financing: (a) physical upgrades of quarantine stations in Puerto de Corinto, and the Guasaule and Las Manos passes; (b) installation of new stations in Trojes-Teotecacinte in Nueva Segovia, El Rama (Puerto Esperanza) in the RAAS, Potosí and Las Tablillas; (c) laboratory equipment for diagnosis, station inspection and disinfection; (d) procurement of three mobile stations for internal monitoring, to support the campaigns for eradication of diseases and infestations and monitor the free areas (Mediterranean fly, tuberculosis/brucellosis); (e) publication of the consolidated manual of quarantine sampling and inspection procedures; and (f) technical support at the new quarantine stations.
- (iv) **Agricultural health services – laboratories.** Physical works, equipment, consulting services, vehicles and inputs will be financed for the upgrading and outfitting of the existing laboratories in the DGPSA, MINSA and MIFIC, to comply with Laboratory Good Practices and biosafety rules. The following are called for: (a) relocation of the DGPSA Central Veterinary Diagnosis Laboratory, in an effort to rationalize various joint services; (b) reassignment of duties and spaces in the regional diagnostic laboratories among veterinary, phytosanitary and analytical services for producers and manufacturers; (c) upgrade of the biological waste laboratory to comply with international market demands for biological and pesticide residuals, analysis of animal feeds and expansion of facilities and equipment for pesticide quality analysis; (d) upgrade of facilities, equipment, drugs and biological material to improve the operations of the MINSA food and water microbiology laboratory, its biosafety and handling of analytical protocols. To ensure the proper handling and security of the samples, an area will be modified for receiving and safeguarding samples exclusively for food products; (e) equipment, materials and drugs necessary for the MINSA physical-chemical food laboratory to conduct adequate analyses to guarantee food safety; (f) equipment, materials and drugs that will allow MIFIC's food laboratory (LABAL) to satisfactorily perform its function of determining food shelf life and conducting predictive microbiology activities; (g) drafting and implementation of quality and safety manuals, including laboratory biosafety and protection considerations; and (h) training of laboratory staff in managing the quality of results.
- (v) **Agricultural health services – systems.** Consulting services, equipment and documentation will be financed to: (a) create a web page and domain for the DGPSA where DGPSA and SINIA activities, current laws, service information, service rates and fees and a site for

user complaints or concerns are posted and kept up to date; and
(b) install an intranet system in the DGPSA and quarantine stations.

- (vi) **DGPSA quality management unit.** The following will be financed:
(a) construction and equipping of an auditorium and two meeting rooms at DGPSA facilities; (b) teaching materials for training DGPSA and MAGFOR staff; on sanitary and phytosanitary measures (SPM), safety and protection, and environmental aspects; (c) access to current technical-scientific documentation, directly or through electronic data networks, free or by subscription, for the DGPSA, MAGFOR, MINSA (laboratories, food registration and monitoring) and MIFIC (Codex, guidelines and laboratories); and (d) consulting services for design and implementation of the DGPSA administrative management system to guarantee uniformity of codification and format criteria, updating and distribution of forms, registrations, guidelines, and internal procedures and instructions.
 - (vii) **DGPSA – Food Safety Division [Dirección de Inocuidad Alimentaria] (DIA).** Consulting services, equipment, documentation and teaching materials will be financed for the design and implementation of the DIA's Food Safety Program, including:
(a) program for inspection and monitoring of food waste, pollutants and hygiene; (b) improved safety assurances with the enforcement of the Agricultural Good Practices (AGPs) in primary productive processes; Manufacturing Good Practices (MGPs); Standard Operating Health Procedures (SOHP); Hazard Analysis and Critical Control Points (HACCP) in industrial processing; and Identification, Traceability and Recall (ITR) throughout the food chain; (c) implementation with MINSA, MIFIC, the municipalities, and the NGOs of joint health campaigns in the most problematic regions and where foods of highest risk to public health are involved; (d) validation of safety assurance systems; and (e) design of mechanisms for animal identification and coding of productive units so that they can be used for traceability purposes throughout the country. Until the DIA is created, the DGPSA Department of Inspection, Certification and HACCP will receive assistance and be responsible for the activities in this component.
- b. **MINSA (US\$582,000).** Consulting services, training and equipment will be financed to strengthen the Food Certification and Regulation Division in its duties of inspection, supervision and monitoring of the food processing plants (not under DGPSA oversight), food distributors and shops. Program support is prioritized among the SILAIS in the departments and/or regions that have more commercial and productive volume and a greater incidence of FBIs. The SILAIS will receive equipment to perform the inspections and their staff will be trained in food handling good practices, current legislation and food sampling

procedures. Inspection and sampling manuals will be prepared. An auditor of inspectors of nonagricultural commercial and industrial food establishments will be hired, and the additional minimum staff necessary to conduct laboratory inspection and analysis in the selected SILAIS will be hired. **This additional staff, essential to ensure food safety, and hence public health, may be financed with loan funds. At the end of the program, MINSA is expected to have absorbed its costs with the funds it will collect from fines imposed as a result of the activities carried out by these officials.**

- c. **MIFIC (US\$113,000).** Computer equipment and systems will be financed to strengthen the three sections involved in safety monitoring: Codex, Standardization and Accreditation.

3. Health education and communication (US\$857,000)

- 2.5 The flow of data on health services to DGPSA customers and agricultural product consumers will be expanded to increase their understanding of the importance of animal health and plant protection services to achieve food safety and to promote the export of agricultural products. Three subcomponents are supported to this end: (i) health education; (ii) creation of the health quality seal; and (iii) health quality surveys.

a. Health education (US\$672,000)

- 2.6 Support will be provided to establish: (i) training programs for trainers and producers involved in food products selected for their production volume and their greater commercial and economic potential. Consulting services and teaching materials will be financed to prepare the training strategy and methodology and cover training costs. About 3,000 producers are expected to be trained in the following subjects: (a) Agricultural Good Practices (AGPs) for farmers; (b) Manufacturing Good Practices (MGPs), Standard Operating Health Procedures (SOHPs) and HACCP for the agricultural industry; (c) Handling Good Practices (HGPs) for distributors and consumers; and (ii) training workshops for consumer groups on elements of food safety, and the importance of label verification (with respect to expiration dates and storage conditions) and compliance by distributors with these conditions that directly affect food safety. The beneficiary selection criteria for the training events can be found in Technical Annex 8.

b. Health quality seal (US\$60,000)

- 2.7 As part of the health education efforts, the use of a health quality seal will be introduced on products that fully comply with health requirements and standards. Once obtained, the producer may place the seal in a visible location on the respective product package. The program will finance the consulting services and materials required to design the seal, and develop related policies operating

mechanisms, charges, and informational campaigns to educate the public on the meaning and significance of the seal on the products.

c. Health quality surveys (US\$125,000)

- 2.8 The costs of design, data gathering, processing and analysis of three biannual surveys, including baseline, and their distribution to users of DGPSA services and consumers, will be financed. Approximately 2,500 farmers and agroindustrial producers will be surveyed in the regions of the selected SILAIS. The purpose of the survey is to obtain information on the progress of efforts to recognize the importance of the services, the perception by users and consumers of service quality and of SINIA, and to keep the information concerning demand for the various services up to date.

C. Cost and financing

- 2.9 The total cost of the program is US\$8,111,000, of which the Bank will finance US\$7,300,000 out of the Fund for Special Operations. The local counterpart funds will be US\$811,000. Technical File #6 contains the itemized program costs, summarized in the table below:

Table II-1
Cost and Financing (in thousands of U.S. dollars)

Categories	FSO	Local	Total	% Total
I. Administration and Supervision	450	12	462	5.7
a. Operational administration	350	12	362	4.5
b. External audit and evaluations	100		100	1.2
II. Direct Costs	6,416	717	7,133	87.9
2.1 Component 1: Institutional support	487	20	507	6.3
a. MAGFOR-DGPSA	199	20	219	2.7
b. MINSA management system	38		38	0.5
c. Support for municipios	250		250	3.1
2.2 Component 2: Service Expansion and Strengthening	5,122	647	5,769	71.1
a. MAGFOR-DGPSA	4,427	647	5,074	62.6
b. MINSA	582		582	7.2
c. MIFIC	113		113	1.4
2.3 Component 3: Health Education and Communication	807	50	857	10.6
a. Health Education	632	40	672	8.3
b. Health Quality Seal	50	10	60	0.7
c. Health Quality Surveys	125		125	1.5
III. Contingencies and Cost Escalation	131	22	153	1.9
Subtotal	6,997	751	7,748	95.5
IV. Financial Costs	303	60	363	4.5
a. Interest	230		230	2.8
b. Credit fee		60	60	0.7
c. Inspection and supervision (FIV)	73		73	0.9
Total	7,300	811	8,111	100.0
% program	90	10	100	

III. PROGRAM EXECUTION

A. Borrower and executing agency

- 3.1 The borrower will be the Republic of Nicaragua and the program executing agency will be the Ministry of Agriculture and Forestry (MAGFOR), through the DGPSA, the chief regulatory and administrative agency with the public responsibility for animal health and plant protection and safety in the primary and industrial agrifood production process. MINSA, MIFIC and 34 municipios will participate in the program.

B. Program execution and administration

- 3.2 A program coordinating unit (PCU) will be set up as a technical unit under the DGPSA Director. The PCU will consist of three professionals: a coordinator, a procurement specialist and a financial-accounting expert. It will coordinate and work closely with the DGPSA technical units. This PCU will receive administrative support and basic equipment funded by the program. **A special condition precedent to the first disbursement of program funds will be the establishment of the PCU and the selection of the coordinator for that unit, in accordance with the terms previously agreed upon by the executing agency and the Bank.**
- 3.3 The PCU's functions include:
- a. Process contracting for the works, goods and related services, and consulting services, financed with program funds for the DGPSA, MINSA, MIFIC and beneficiary municipios, in accordance with Bank policies and procedures;
 - b. Give approval at the start of any procedure relating to procurement of works and goods and related services or consulting services promoted by MINSA or MIFIC with program funds, verifying that eligible program expenses are involved;
 - c. Pay for eligible expenses to providers of works, goods and services contracted by MINSA and MIFIC within the program framework;
 - d. Prepare, obtain and submit the annual operating plans (AOPs) and progress reports, in accordance with the terms of the loan contract and as necessary for the proper disclosure of program management information;
 - e. Maintain adequate financial information, accounting and internal control systems; prepare and submit disbursement requests to the Bank with support documentation for expenses, audited financial statements and other financial reports the Bank may request; serve as liaison with the Bank and work with the auditors;

- f. Open separate and specific bank accounts to administer the Bank loan proceeds and counterpart funds;
 - g. Supervise the physical execution of the program, with a view to its goals and guaranteeing compliance with the terms of the loan contract.
 - h. Prepare the terms of reference for consulting services contracted under the program for the DGPSA;
 - i. Convene and coordinate regular meetings to monitor the project;
 - j. Prepare cooperation agreements to be signed by MAGFOR and the beneficiary municipios in the program.
 - k. Gather information, prepare the baseline and make it available for the logical framework, the various program evaluations and the Bank, within six months of the first disbursement.
- 3.4 The DGPSA, MINSA and MIFIC will be responsible for executing their respective procedures for contracting consulting services, and procuring works, goods and related services, in accordance with Bank policies and procedures on the subject. To that effect, they will work closely with the PCU, from whom they will request approval before starting any procedure and to whom they will deliver payment requests together with the supporting documentation.
- 3.5 The health education component will be executed with the support of the producers' associations, manufacturer's associations and NGOs. The beneficiary selection and product ranking criteria are clearly identified and agreed upon with the executing agency and can be found in Technical File #8.

C. Procurement of goods and services

- 3.6 The procurement of goods and the contracting for construction works and consulting services will be in accordance with the Bank's procurement policies and procedures. International competitive bidding will be compulsory for purchases financed wholly or partially with foreign currency from the loan, the value of which exceeds the equivalent of US\$250,000 for procurement of goods and related services, the equivalent of US\$1,000,000 for works construction, and the equivalent of US\$200,000 for the contracting of consulting services. These ceilings are based on the Guide for Use of Project Equipment: Procurement Planning of the Bank's Procurement Policy Office. Bidding procedures below these thresholds will be carried out in accordance with Nicaraguan laws.
- 3.7 The selection method based on quality- and price-weighted factors may be used, with price not accounting for more than twenty percent (20%) of the total points awarded for the following: the contracting of the consulting services to be financed

with loan proceeds for the component I institutional support activities for (i) the DGPSA in its organizational restructuring, preparation of a compendium of regulations and design of fee systems; and (ii) the municipios, as well as the component III activities of health education and communication, consisting of (i) the design of the health quality seal; and (ii) health quality surveys. The procedure to be used will be agreed upon by the borrower and the Bank, in accordance with Bank policies. The use of the quality- and price-based selection method for the aforementioned consulting services is justified because (i) the work involved is not highly technical or extremely complex; (ii) the impact of the work has no serious consequences; and (iii) because the work is in fields where it could be performed in a substantially similar manner, several bids competing under the same conditions could be submitted.

- 3.8 In staff hiring to be financed with loan proceeds, the fixed budget hiring method will be used, to avoid creating distortions in the salary scale and because simple work that can be clearly defined is involved. The selection process will be competitive. The price will be published in the terms of reference and will not be subject to negotiation.
- 3.9 The procurement list, by type of purchase, lot and schedule, is in Technical File #6 and summarized in Annex II.

D. Execution period and disbursement schedule

- 3.10 The program is expected to be executed and disbursed over a four-year period starting from the effective date of the loan contract. The schedule of annual disbursements under the program, by financing source, follows:

Table III-1
Disbursements by financing source (in US\$000)

Source	Years				
	1	2	3	4	Total
FSO	1,458	2,547	2,187	1,107	7,300
Govt. of Nicaragua	162	283	243	123	811
Total	1,620	2,830	2,430	1,230	8,111
	20%	35%	30%	15%	100%

E. Monitoring and evaluation

- 3.11 For project monitoring and evaluation, the DGPSA, through the PCU, undertakes to submit the following reports to the Bank's satisfaction: (i) an initial report with the program execution plan, describing the operating plan for the project's first year; (ii) annual operating plan (AOP) within thirty (30) days prior to the start of each

- calendar year of the program; and (iii) semiannual progress reports which must be submitted within sixty (60) days following the end of each six-month calendar period. The AOPs must include the procurement plan for the respective year and the semiannual reports must include information relating to the execution of said procurement plan.
- 3.12 The program will be monitored using the progress and impact indicators set forth in the itemized Logical Framework (Technical File #5). The PCU will prepare a baseline with information from the surveys, secondary information on health, production by commodity, and exports, taking 2003 as the base year. For the institutional support component, the organizational restructuring plan will be monitored as agreed by the Bank and the government before execution begins. For the consumer training and customer communication component, a biannual survey will be conducted to identify the level of knowledge attained by the target population through the program. The first survey will be conducted at the start of the program, which will serve as a baseline for these measures. The success of the service expansion and strengthening component will be observed by using the same survey and information on effective use of the services, perception of quality and fee collection.
- 3.13 To measure and verify attainment of the program objectives, the DGPSA also undertakes to submit, to the Bank's satisfaction, the following evaluation reports:
- a. A midterm evaluation to be conducted twenty-four (24) months from the effective date of the program, or when at least 50% of the loan proceeds have been disbursed, whichever occurs first. This evaluation will include:
(i) evaluation of changes in the indicators noted in the logical framework;
(ii) review of the progress made in the DGPSA organizational restructuring;
(iii) review of the investment in the DGPSA infrastructure; (iv) status of the development of a plan for determining the fees, cost recovery and financial position of the DGPSA; (v) analysis of the good practices campaigns' effectiveness; (vi) evaluation of the customer communication campaigns' effectiveness; and (vii) measurement of the program's effectiveness in increasing agricultural product exports and in improving safety in the domestic market.
 - b. A final evaluation will be made when 90% of the funds have been disbursed, and will be based on the targets and monitoring and performance indicators agreed upon with the Bank. This evaluation will be based on measuring performance and impact indicators on technical, environmental, financial and social factors set forth in the program's logical framework. For these evaluations, an independent consulting firm will be hired with proceeds from the loan.

F. Accounting, financial and operational audits

- 3.14 Transactions with loan proceeds for the various program components and subcomponents will be entered on the accounting books by MAGFOR as the program's executing agency. MINSA and MIFIC will cooperate with MAGFOR as required.
- 3.15 The annual external program audit will be conducted in accordance with the applicable Bank policy (documents AF-100 and AF-300). The audit should include an annual report to be submitted within 120 days after fiscal year end, duly audited by a private auditing firm acceptable to the Bank and in accordance with the terms of reference approved by the Bank (document AF-400). The costs of the external audit will be financed with loan proceeds. In selecting and hiring the auditing firm, the Bank's approved procedures for selecting and hiring auditing firms will be used (document AF-200).

G. Revolving fund

- 3.16 Program funds will be transferred to the executing agency by setting up and replenishing a revolving fund. The amount of the revolving fund will be up to 5% of the total loan.

H. Ex post evaluation

- 3.17 The program is taking the necessary steps to ensure that the information required for an ex post evaluation is available once the program is completed. If it had the funds, this evaluation would be conducted at the end of the program's second year. The evaluation will provide evidence of the attainment of the program performance and impact targets in terms of: (i) increase in exports of products that comply with plant protection and animal health requirements; (ii) reduction in the incidence of food-borne illnesses nationwide; (iii) increased effectiveness of the DGPSA in service management, fee determination and cost recovery methods; and (iv) advances and improvements in the findings of the international health and certification evaluations conducted in 2002-2003. This ex post evaluation may use the baseline to be developed under the program for the logical framework, the midterm and final evaluations, the project completion report and the survey results and other databases that the DGPSA develops during execution.

IV. FEASIBILITY AND RISKS

A. Institutional feasibility

- 4.1 During project preparation, an analysis was conducted of the DGPSA's institutional capacity and efficiency. The analysis concluded that institutional restructuring and strengthening will improve the DGPSA's efficiency and boost its sustainability due to better resource management, thereby improving its institutional feasibility. The new institutional structure, proposed under this program, limits the level of overlapping of DGPSA activities while consolidating certain support activities and reorganizing the institution so that it can respond more effectively to user demands. The organizational restructuring includes strengthening the DGPSA's management capacity by improving the internal technical audit, as well as the fee system with cost recovery, and the capacity to gather, process and analyze basic and follow-up information for environmental management and internal technical evaluation. The DGPSA will seek private sector participation to provide services in activities where the private sector has sufficient capacity in the country (for example, seed and fruit processing plant inspections). The program will strengthen the capacity of the DGPSA to certify and audit authorized inspectors.
- 4.2 The coordinating unit to be set up is small—three professionals—with technical independence, under the DGPSA director: a coordinator, a procurement specialist and a financial-accounting expert. The PCU will execute the program with the various participating DGPSA units, whose staff will directly benefit from the acquisition of knowledge and the financed equipment. The end of the project and the PCU activities should not have a material effect on the operations of the DGPSA or its institutional feasibility.
- 4.3 The Nicaragua Integrated Food Safety System (SINIA) will establish a technical link among the ministries (MAGFOR, MINSA and MIFIC) working on safety aspects. SINIA administration will not require hiring additional staff and thus, the ministries will not incur an additional financial burden. The signing of the presidential decree formalizing the establishment of the cooperation protocol for operation of SINIA will form the legal basis for system operation. The SINIA regulations clearly define each institution's role in handling safety-related aspects, how the duties and responsibilities are coordinated and how to share infrastructure and physical resource support with each other.
- 4.4 To ensure that the flow of revenue reimbursements to the DGPSA by the Ministry of Finance improves, as part of the approval process of the program's AOP, a certification will be required from the Ministry of Finance that the DGPSA will have these funds on a timely basis according to a schedule agreed upon by the DGPSA and the Ministry of Finance.

- 4.5 The funds to cover the cost of additional staff, which will gradually be assumed by MINSA during the program, may come from the collection of fines imposed by MINSA as a result of the inspections conducted by these officials in the SILAIS.
- 4.6 The sale of services offered by MIFIC to the food industry in general will support the LABAL.

B. Socioeconomic feasibility and benefits

- 4.7 The main benefits of the program will come from the greater access of Nicaraguan products to domestic and foreign markets, once the markets recognize that Nicaraguan products comply with international animal health and plant protection standards. Agricultural product rejections and losses will be reduced, improving the productivity of and affording greater protection for forestry products by reducing the incidence of outbreaks of disease, infestations and pests in animals and plants. A reliable system of plant and animal safety and certification will foster increased and diversified export production, meaning better economic opportunities for producers. Nicaragua will have a health certification system that will make it more competitive and better attuned to the rest of the Central American region.
- 4.8 The project will benefit tourism and national public health by improving the safety of products available in the local market. The creation of SINIA incorporates more effective controls and greater efficiency by integrating the use of available resources and coordinating with the participating institutions.
- 4.9 The socioeconomic conditions of farmers and manufacturers will improve, due to: (i) an increase in exports of agricultural and agrifood products through access to new markets, as a result of an agricultural and forestry health system that is more reliable as a result of quarantine actions, laboratory modernization, implementation of the safety program, improvement in plant protection and animal health monitoring and campaigns and implementation of and training in good practices and safety assurance procedures (AGPs, MGPs, SOHP, HACCP, ITR); (ii) greater diversity in local consumption of Nicaraguan food products, due to greater confidence in their safety as a result of the establishment of SINIA; and (iii) better communication to customers of measures undertaken by the authorities.
- 4.10 Service and safety improvements in the procedures and methodologies for handling laboratory material better protect to the health of the employees involved.
- 4.11 The installation of the quarantine station at La Rama in the RAAS and reinforcement of the technical staff in Puerto Cabezas in the RAAN will expand the technical staff and DGPSA presence in the region. The training activities in the native languages of the farming communities on the Atlantic coast will expand the scope of DGPSA service delivery in this area of the country.

- 4.12 The economic viability of the program investment was analyzed, based on the strategy of targeting services aimed at commodities of higher volume and commercial value, capturing the highest demand. The analysis focused on the economic impact of increasing exports of the following commodities: beef cattle (meat and milk); poultry, pork, shrimp, peanuts and corn, and on the program's impact on public health through increased food safety. The analysis of the selected products included the cost of all funded activities related to product-targeted services, including campaigns, laboratories, quarantines and inspection plans. The analysis concluded that the project will generate a high economic return in terms of the internal rate of return (IRR), as a result of maintaining the export levels of meat (285%) and shrimp (165%); increasing exports of chicken (25%) and peanuts (152%); and boosting corn production (33%). The creation of additional volume for the domestic market was not quantified, which would further enhance the results obtained. The analysis rejected investment in the pork product line, whose return was not sufficient to justify the investment (IRR of 4%).
- 4.13 In terms of public health, the analysis concluded that the investment in SINIA, in the strengthening of MINSA and MIFIC for food safety, and the health education campaign will have a high economic return due to the reduction of food-borne diseases and mortality (IRR of 30%). The aggregate return, by weighting the selected commodities, yields an IRR of 75%. Even subjecting the findings to a sensitivity analysis of assumptions of the economic value of time lost due to illnesses or death produced solid results of high returns from the investment in safety. Technical File #4 describes the calculations made and the assumptions used to make the analysis.
- 4.14 Given the public good nature of what is to be financed by this operation, the benefits of which go to the population in general, this operation does not qualify as a poverty-targeted or social equity enhancing project.

C. Financial viability

- 4.15 Law 291 authorizes the DGPSA to recover its operating costs through the sale of services. This program introduces improvements in the DGPSA cost information system and develops a fee schedule based on the concept of direct and indirect operating cost recovery, including administrative overhead. Capital costs or special emergency campaign costs to combat infestations and diseases would not be included. The fee schedule will be simple and adjusted whenever circumstances require it, at least once a year, to ensure that the fees reflect the real costs of services and are not undermined by inflation or changes in the exchange rate. The current fee system, set up in 2000, has not been updated. Therefore, the fees do not reflect the cost of the resources used, producing an inefficient use of resources. The new fee system is expected to increase the DGPSA's efficiency in resource use and improve financial viability. The campaigns planned as part of the project also emphasize communication with customers and are geared to service improvement,

which is expected to increase demand for DGPSA services. Greater demand for services should improve the DGPSA's financial position and make it more financially sustainable.

D. Environmental impact

- 4.16 Positive environmental effects are expected from the project, such as less pollution from hazardous chemical substances in the soil, water sources, agrifoods and the population, and halting the growing resistance of pathogenic microorganisms, due to (i) the prevention, supported by the safety program, of abuse of pesticides, veterinary medications and agrochemicals in general; (ii) management of solid and liquid effluents from veterinary diagnostic laboratories, from biological waste, and from microbiology and pesticide control.
- 4.17 The risk of environmental pollution from pathogenic microorganisms and diseases will be reduced as a result of improved design, operation of and compliance with biosafety measures in laboratories working on zoonotic diseases and viable pathogenic microorganisms. Controls with respect to the importation of genetically modified organisms (GMOs) and agrochemical substances barred from import into the country will be strengthened. The identification of animals and productive units will permit traceability, facilitating the identification of health and bioterrorism risks throughout the entire productive chain.
- 4.18 The agricultural and forestry endowment will be better protected against exotic diseases and infestations with the upgrade of the quarantine stations, and against endemic diseases and infestations through more campaigns for control and mitigation of economically significant diseases and infestations.

E. Risks

- 4.19 The success of the program requires that Nicaragua maintain its export level of certain commodities, for which it must have access to international markets, particularly the United States and Central America. The project includes investment in activities that will help Nicaragua meet the plant protection and animal health requirements of countries purchasing commodities with the highest commercial potential. It is also important that Nicaragua continue to negotiate international treaties such as the Central American Free Trade Agreement (CAFTA), where negotiations are progressing satisfactorily and attainment of the export goals of the supported items is very likely. However, if trade expected to be derived from the CAFTA and other markets fails to materialize in the short and medium terms, the program would allow for reevaluation of the products selected so as to redirect the resources to services that support more promising commodities.
- 4.20 The program assumes that consumers will demand and buy products of higher health quality. Although consumers will probably seek products of high health

quality, it is possible that, due to lack of knowledge of the importance of food safety or due to the inability to identify safe products, demand will not be as high. For this reason, the program includes health education campaigns and introduces the system of health quality seals.

- 4.21 For SINIA to operate successfully, the participating technical staff of MINSA, MIFIC and the DGPSA must work in coordination. Likewise, changes in the DGPSA structure require that the DGPSA technical staff accept and easily fit into the new structure and duties of the DGPSA. To facilitate the coordination of activities and help the officials adapt to the new organizational structures, the project will finance training for staff in their new roles and offer workshops with the joint participation of staff from the participating agencies. The SINIA protocol of operation, which formalizes the coordination of activities and the definition of duties and competencies, was prepared jointly with the technical staff delegated from each ministry.
- 4.22 With the new real cost-based fee structure, it is generally expected that service fees will increase under the new system. This creates the risk that users may resist paying the fees, leading to a drop in total demand for DGPSA services. To counteract this risk and increase demand, the project is aimed at improving quality and relevance of the services provided by the DGPSA and intends to build demand through campaigns, improved communication with customers and the generation of new customers. These efforts will help the beneficiaries participate actively to improve the country's health and safety standing and to understand and accept the advantages of the services, thereby increasing their willingness to pay for them.

NICARAGUA
IMPROVEMENT OF PLANT, ANIMAL AND FOREST HEALTH SERVICES (NI-0182)¹
LOGICAL FRAMEWORK

Narrative Summary	Indicators	Verification Methods	Key Assumptions
Goal Increase domestic and foreign trade of Nicaraguan animal, plant and forestry-based products			
Purpose Ensure that Nicaraguan agricultural and agrifood products comply with national and international trade health requirements, guidelines and standards, through sustainable upgrades in the quality of plant and animal health services and food safety.	Maintain the export level of agricultural products, particularly beef cattle (US\$92 million in exports in 2001), which face new health requirements, guidelines and standards in the international market. Value added with respect to exports of agricultural products, particularly meat, shrimp and peanuts (with respect to 2003): Year 2: 10% (approx. US\$16 million) Year 4: 20% (approx. US\$32 million)	Statistical information from MAGFOR and MIFIC. MINSA and SINIA information system.	Future access to foreign markets will improve with international treaties. Consumers will demand and purchase products of high health quality.

¹ The baseline will be defined based on the results of the activities financed under the program for this purpose, within the first six months from the first disbursement.

Narrative Summary	Indicators	Verification Methods	Key Assumptions
	<p>Increase in the number of agricultural products that comply with international trade health requirements, guidelines and standards, particularly chicken, at the end of year 4.</p> <p>Reduction in the incidence of food-borne illnesses and deaths in the selected departments:</p> <p>Year 2: 5% (approx. 5,000 illnesses and 10 deaths)</p> <p>Year 4: 10% (approx. 10,000 illnesses and 20 deaths)</p>		
<p>Components</p> <p>1. Institutional support</p> <p>Strengthen capacity of institutions involved in key areas of national health quality to facilitate performance of their functions and attain program objectives.</p>	<p>The Nicaraguan Integrated Food Safety System (SINIA) is set up and in operation with the active participation of the ministries involved and municipios at the end of the second year.</p> <p>User perception of DGPSA service quality improves:</p> <p>Year 2: 50% of users say that DGPSA service quality is satisfactory.</p> <p>Year 4: 75% of users say that DGPSA service quality is satisfactory.</p> <p>Service rates cover, at a minimum, the direct and indirect costs of these services.</p>	<p>Publication of SINIA protocol document and minutes of regular SINIA coordination meetings.</p> <p>Biannual health quality survey of farmers, food industry, distributors and consumers.</p> <p>Fee schedule is published yearly and accessible, and annual budget report broken down between revenue from service fees and State revenue.</p>	<p>MINSA, MIFIC and DGPSA technical staff involved in SINIA will work in coordination.</p> <p>DGPSA technical staff accepts and easily fits into the new structure and functions of the DGPSA.</p> <p>Users of the services are willing to pay.</p>

Narrative Summary	Indicators	Verification Methods	Key Assumptions
<p>2. Service expansion and strengthening</p> <p>Offer technical training in safety and protection, and outfit and modernize facilities, equipment and management systems of MAGFOR-DGPSA, MINSA and MIFIC.</p>	<p>Volume increase (by type and quantity) of DGPSA services:</p> <p>Year 2: 10% (value US\$200,000)</p> <p>Year 4: 20% (value US\$400,000)</p> <p>Declaration of bovine tuberculosis- and brucellosis-free area in Nueva Guinea, through increase in the number of certified bovine tuberculosis- and brucellosis-free farms.</p> <p>Year 2: 30%</p> <p>Year 3: 60%</p> <p>Year 4: 100%</p> <p>At least 250,000 head of cattle born each year, identified through the traceability mechanism.</p> <p>Year 2: 250,000 identified animals</p> <p>Year 3: 500,000 identified animals</p> <p>Year 4: 750,000 identified animals</p> <p>Country declared free of Newcastle, infectious laryngotracheitis, influenza and salmonellosis.</p> <p>During the project, prevention of the appearance of new production units with shrimp white spot and yellow-head (maintain, as a minimum, the 2001 export value of shrimp of US\$38 million).</p> <p>2% annual cumulative reduction in damage to peanut export plantations by flying locusts (approx. US\$500,000 per year).</p> <p>2% annual cumulative reduction in damage to corn plantations by field rats (approximately US\$100,000 per year).</p>	<p>Semiannual and annual reports by the DGPSA to the IDB</p> <p>DGPSA annual operating plans (AOPs)</p> <p>Nicaraguan official statements.</p> <p>Quarantine reports with incidence of detected cases.</p>	<p>Producers recognize the need and advantages of the DGPSA services and use them.</p> <p>Private sector is interested in providing services that can be legally delegated.</p> <p>MINSA technicians will coordinate their efforts with MIFIC and the DGPSA as provided in SINIA.</p>

Narrative Summary	Indicators	Verification Methods	Key Assumptions
	<p>Increased detection of infestations and diseases at borders.</p> <p>Year 3: 5%</p> <p>Year 4: 10%</p>		
	<p>Increase in number of industrial establishments under inspection:</p> <p>Year 2: +20</p> <p>Year 3: +20 (40 additional in total)</p> <p>Year 4: +20 (60 additional in total)</p> <p>Monthly inspection of nonagricultural businesses and industries from the four departments selected by SINIA, monthly inspections for 100% of supermarkets and large food distributors starting in the third year.</p>		
<p>3. Health education and communication</p> <p>Expand the flow of health service information to DGPSA users and to consumers of agricultural products, to increase their understanding of the importance of plant and animal health services to achieve food safety and to promote export of agricultural products.</p>	<p>Farmers, the food industry, distributors and consumers have greater knowledge of safety and government plant and animal health programs.</p> <p>Year 2: 30% of people surveyed know the basics of safety and government programs.</p> <p>Year 4: 60% of people surveyed know the basics of safety and government programs; 2000 farmers trained in AGP; 100 agroindustries trained in MGP, SOHP and HACCP; 100% of supermarkets and large distributors from the selected departments trained in HGP.</p> <p>Nicaraguan products, whose industrial and commercial processes are overseen by the DGPSA and MINSA, are health-certified, labeled with the seal and sold in the domestic</p>	<p>Biannual surveys of farmers, agroindustry, distributors and consumers.</p> <p>Informative publications for the health education campaign (ads, pamphlets, posters, etc.).</p> <p>Semiannual and annual reports from the DGPSA to the IDB.</p>	<p>Farmers, agroindustry, distributors and consumers accept the importance of plant and animal health and safety.</p> <p>MAGFOR/DGPSA have the capability to manage the program and the market recognizes their capacity to improve product health quality.</p> <p>The seals have value in the market.</p> <p>Nicaraguan producers participate actively in efforts to improve the health quality of their products.</p>

Narrative Summary	Indicators	Verification Methods	Key Assumptions
	market: Year 3: 50% of products Year 4: 70% of products		

IMPROVEMENT OF PLANT, ANIMAL AND FOREST HEALTH SERVICES (NI-0182)

PROCUREMENT PLAN

#	Major Project Purchases by Lot	Sources of Financing		Procurement Method ^{1/}	Prequalifi- cation	Specific Procurement Notice	Status ^{2/}
		IDB/FSO (%)	Local/Other (%)		Yes/No	Tentative Publication Date	
1. Goods							
1.	Laboratory analytical equipment, glassware and miscellaneous - Amount (US\$425,712)	100		ICB		04/2004	
2.	Laboratory analytical equipment, glassware and miscellaneous - Amount (US\$490,275)	100		ICB		04/2005	
3.	Laboratory analytical equipment, glassware and miscellaneous - Amount (US\$80,824)	100		LCB		04/2006	
4.	Electric generator plant Amount (US\$32,436)	100		LCB		04/2004	
5.	Protective gear and uniforms Amount (US\$46,018)	100		LCB		04/2004	
6.	Mobile stations for quarantine and internal control purposes - Amount (US\$202,947)	100		LCB		04/2004	
7.	Copier, digital camera, Datashow, etc. Amount (US\$38,007)	100		LCB		04/2004	
8.	Computers, printers, fax, etc. Amount (US\$122,733)	100		LCB		04/2004	
9.	Computers, printers, fax, etc. Amount (US\$76,535)	100		LCB		04/2006	
10.	Refrigeration (air conditioning and refrigerator/freezers) Amount (US\$88,513)	100		LCB		04/2004	
11.	Refrigeration (air conditioning and refrigerator/freezers) Amount (US\$57,452)	100		LCB		04/2005	
12.	Refrigeration (air conditioning and refrigerator/freezers) Amount (US\$41,310)	100		LCB		04/2005	
13.	Double cabin vehicles, 4x4 and bus Amount US\$632,500)	100		ICB		04/2004	
14.	Motorcycles- Amount (US\$43,125)	100		LCB		04/2004	

#	Major Project Purchases by Lot	Sources of Financing		Procurement Method ^{1/}	Prequalifi- cation	Specific Procurement Notice	Status ^{2/}
		IDB/FSO (%)	Local/Other (%)		Yes/No	Tentative Publication Date	
Inputs						04/2004	
15.	Laboratory drugs and biological materials Amount (US\$168,377)	100		LCB		04/2004	
16.	Laboratory drugs and biological materials Amount (US\$83,909)	100		LCB		04/2005	
17.	Laboratory drugs and biological materials Amount (US\$38,945)	100		LCB		04/2006	
18.	Pesticides and pest-targeted chemical products Amount (US\$80,000)	100		LCB		04/2004	
19.	Pesticides and pest-targeted chemical products Amount (US\$80,000)	100		LCB		04/2006	
3. Furniture						04/2004	
20.	Office and laboratory furniture - Bid (Lot 19) Amount (US\$26,367)	100		LCB		04/2004	
21.	Office and laboratory furniture Amount (US\$27,935)	100		LCB		04/2006	
22.	Office furniture Amount (US\$14,810)	100		LCB		04/2004	
23.	Office accessories Amount (US\$11,758)	100		LCB		04/2006	
5. Works							
24.	Laboratory construction and upgrade Amount (US\$281,950)	100		LCB		04/2004	
25.	Upgrade of existing quarantine posts Amount (US\$60,000)	100		LCB		04/2004	
26.	Improvement of training rooms and offices Amount (US\$46,200)	100		LCB		04/2005	

#	Major Project Purchases by Lot	Sources of Financing		Procurement Method ^{1/}	Prequalifi- cation	Specific Procurement Notice	Status ^{2/}
		IDB/FSO (%)	Local/Othe r (%)		Yes/No	Tentative Publication Date	
6. Consulting Services							
27.	LGPs, AGPs, MGPs, HACCP, QM, Fees, CHR, ITR Amount (US\$171,750)	100		S		04/2004	
28.	LGPs, AGPs, MGPs, HACCP, QM, Fees, CHR Amount (US\$89,750)	100		S		04/2005	
29.	LGPs, AGPs, MGPs, HACCP, QM, Fees, CHR Amount (US\$45,250)	100		S		04/2006	
30.	LGPs, AGPs, MGPs, HACCP, QM, Fees, CHR Amount (US\$39,250)	100		S		04/2007	
7. Training services (In LGPs, AGPs, MGPs, HACCP, QM, CHR, ITR)							
31.	MINSA, MIFIC, DGPSA Amount (US\$86,720)	100		S		04/2004	
32.	MINSA, MIFIC, DGPSA Amount (US\$60,000)	100		S		04/2005	
33.	MINSA, MIFIC, DGPSA Amount (US\$53,220)	100		S		04/2006	
34.	Producers, manufacturers, distributors, consumers Amount (US\$164,600)	100		S		04/2004	

^{1/} Notes: **ICB:** International Competitive Bidding
LCB: Local Competitive Bidding
S: Shopping

^{2/} The terminology to be used will be: Pending
Assigned
Cancelled